ABSTRACT

Methods and apparatus are disclosed for distributed reassembly by a computer or communications system of large packets split into smaller packets typically for transport

5   through an network or communications system, such as in a packet switching system. For example, TCP/IP and Ethernet packets are much larger than the 53 byte asynchronous transfer mode ("ATM") packets which are increasingly becoming a fundamental transportable unit through communications networks and systems. Therefore, these larger packets are split into several smaller packets at a source point. Typically, these smaller

10   packets are marked with a sequence number, timestamp, and other ordering and reassembly indications, and sent through a system or across network with these smaller packets arriving at a destination location. These smaller packets are received at the destination location by multiple reassembly components which communicate and coordinate actions among themselves. If the smaller packets are received out of their

15   original sequence order, some mechanism is typically used to resequence (a) the received packets at the destination location, or (b) each subset of the packets received by one of the distributed reassembly components at the destination location. The reassembly components distribute information as to received packets and coordinate the sending of packets from themselves so as to produce the reassembled larger packets. In one

20   implementation, each of the multiple reassembly components maintains one or more data structures indicating packets stored locally and those packets stored anywhere (or elsewhere) within the multiple reassembly components. When all smaller packets comprising a larger packet are received by one of the distributed resequencing components, the reassembly components transmit their smaller packets typically over a

25   common bus or link in a coordinated fashion as to produce the original larger packet.